

PORSCHE

911 & Turbo Carrera
912/E
914

DESCRIPTION

All models use a dry, single disc, diaphragm spring type of clutch system. Clutch operation is mechanical. Pedal is connected to release lever by cables. All models have similar clutch disc designs: 930 models have thicker clutch lining, stronger springs, and larger diameter hubs. 930 models also have release lever mounted so a shorter, thicker cable can be used.

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

- 1) Remove engine and transaxle assembly from vehicle, then separate transaxle from engine. See *Porsche* article in *ENGINE* Section.
- 2) Index mark pressure plate and flywheel for reassembly. Insert clutch alignment tool. Loosen clutch mounting bolts alternately and evenly until spring pressure is released. Slip clutch assembly from vehicle.

Inspection — 1) Check pressure plate and disc for wear, cracks, burning or loose rivets. Replace any part found defective. Check ends of diaphragm spring for wear marks from release bearing. Wear of .011" is acceptable.

2) Lay a straightedge across pressure plate face and check for distortion; up to .011" is permissible. Place clutch disc on input shaft and see that it moves freely on splines. Check disc for lateral runout. Maximum allowable runout for 914 is .020" (.5 mm) and for all other models is .024" (.6 mm).

3) Check clutch release bearing for noise or rough operation. Do not wash bearing in any cleaning solution; clean with a lint free cloth only. Replace bearing if contaminated or loud. Check pilot bearing in crankshaft for rough operation, replace as necessary.

Installation — 1) Place graphite grease or molybdenum disulphide grease in crankshaft pilot bearing, and moisten felt seal with engine oil. Install clutch disc on flywheel using a suitable aligning tool to center disc. Coat diaphragm spring of pressure plate with a thin coat of molybdenum disulphide grease see Fig. 2.

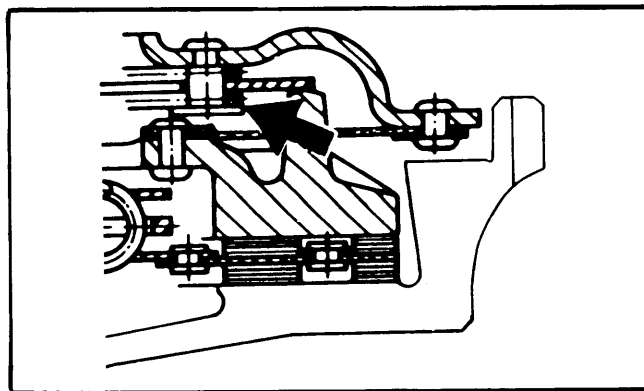


Fig. 2 View Showing Lubrication Point on Diaphragm Spring

2) Install pressure plate to flywheel, aligning marks made at disassembly. **NOTE** — If a new clutch is installed, balancing marks on clutch and flywheel should be offset 180°. Install and tighten clutch attaching bolts one turn at a time in a diagonal sequence to prevent distorting pressure plate.

3) On 911 models, when transmission is installed on engine, pull release lever in a direction opposite engine. There must be a distance of at least .787" between release lever and transmission housing.

CLUTCH CABLE (EXC. 914)

Removal & Installation — Loosen floor mats and fold them over. Raise rubber tunnel cover at front and fold over. Loosen lock nut of clevis at brake pedal, disengage retaining spring from clevis and remove bolt. Unscrew clevis and lock nut from threaded portion of clutch cable and pull out cable to the rear. Loosen lock nut from adjusting nut and unscrew clutch cable from fork clevis. To install, grease cable and reverse removal procedure. Adjust clutch clearance.

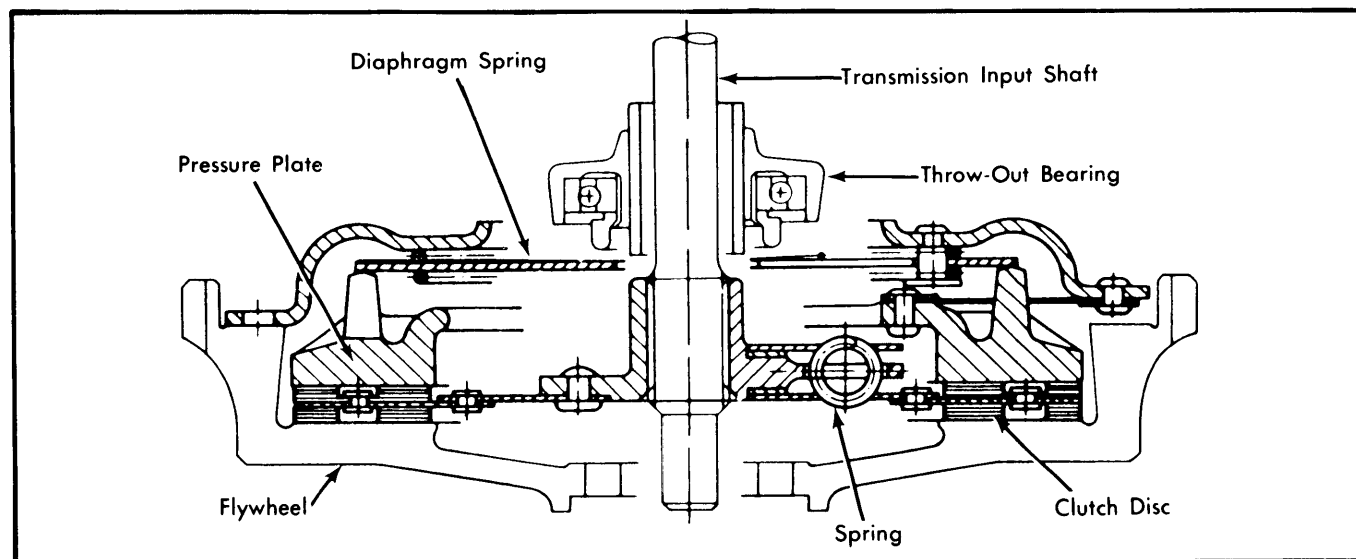


Fig. 1 Sectional View of Clutch Assembly

Clutches

PORSCHE (Cont.)

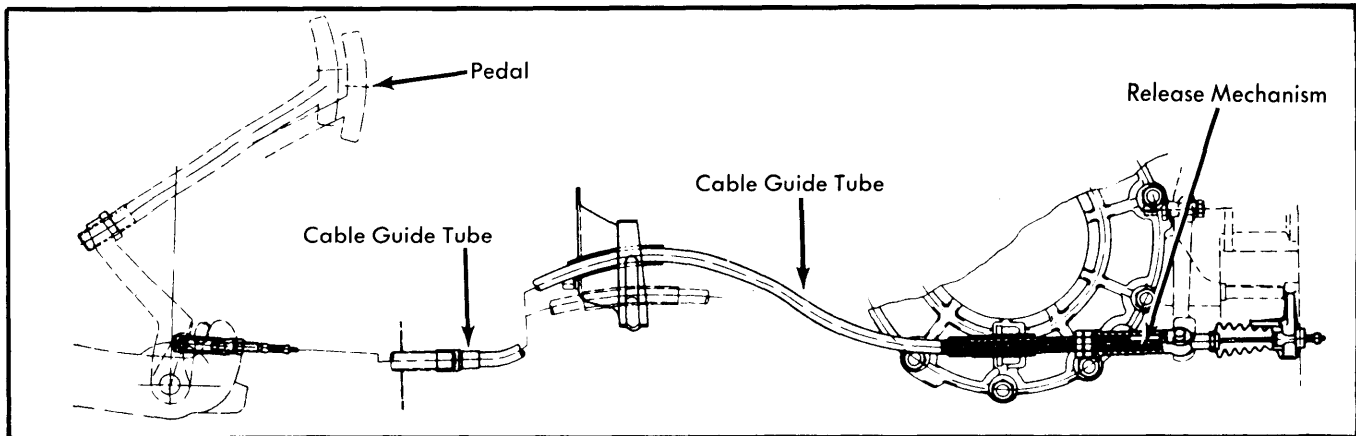


Fig. 3 View of Clutch Actuating Mechanism

CLUTCH CABLE (914)

Removal & Installation — Unscrew self-locking adjusting nut from rear threaded end of cable and detach cable. Remove cable pulley. Remove console housing, cover and floor board. Loosen lock nut from pedal clevis, push clevis pin retainer up and pull clevis pin out. Unscrew cable from clevis and pull cable out rearward. To install, coat cable and pulley with grease and reverse removal procedures. Adjust clutch free play and pedal travel.

CLUTCH RELEASE BEARING

Removal — Remove engine from vehicle. Separate engine and transmission. Disconnect clutch return spring. Remove clutch release bearing from guide sleeve.

Installation — Apply a thin coat of graphite grease to clutch release fork. Install bearing. Adjust throw-out bearing $1\frac{3}{32}$ " (50mm) back from face of clutch using suitable tool.

NOTE — Do not wash clutch release bearing in cleaning solvent. Bearing is pre-packed and requires no lubrication.

PILOT BEARING

Removal & Installation — Check pilot bearing and seal for wear or damage. If replacement is necessary, remove flywheel. Using an arbor press, press bearing out from clutch side of flywheel. Press new bearing in from crankshaft side of flywheel. Grease bearing with molybdenum disulphide grease and oil seal with engine oil.

ADJUSTMENT

CLUTCH ADJUSTMENT

All Models — Loosen cable casing lock nut. Turn adjusting nut until pedal has specified free play. To check free play, pull clutch back toward rear of vehicle.

Clutch Pedal Free Play

Application	Free Play
911.....	.6-.8" (15-20 mm)
912/E.....	.8-1" (20-25 mm)
930.....	.9 (23 mm)

PEDAL ADJUSTMENT

All Models — 1) With engine and transmission warm, depress clutch pedal to stop. In this position reverse gear must just be able to be engaged silently.

2) When clutch pedal is fully depressed, clutch release lever should move .6" (15mm) to completely disengage clutch. If cable housing rests on bottom of guide clamp when pedal is fully depressed, inner cable must be adjusted at yoke end.

3) Measure from threaded cable end of yoke to outer edge of lock nut. Measurement should be .7-.9" (17-22mm), adjust if necessary. If cable housing rests on bottom of guide clamp when clutch pedal is fully depressed, inner cable must be lengthened at yoke end.

4) If arc of cable is too large, allowing cable to come out of guide clamp when pedal is released, inner cable must be shortened at yoke end.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Flywheel	
911.....	108 (14.9)
914.....	80 (11.1)
Clutch	
911 & 912/E.....	18 (2.5)
914.....	15 (2.1)
Turbo Carrera.....	14-18 (2.0-2.5)